NEW ACCURATE WAVENUMBERS OF $H^{35}Cl^+$ AND $H^{37}Cl^+$ ROVIBRATIONAL TRANSITIONS IN THE $v = 0-1$ BAND OF THE $^2\Pi$ STATE.

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HCl^+ is a key intermediate in the interstellar chemistry of chlorine. It has been recently identified in space from *Herschel's* spectra[a] and it has also been detected in the laboratory through its optical emission[b], infrared[c] and mm-wave spectra[d]. Now that *Hershchel* is decomissioned, further astrophysical studies on this radical ion will likely rely on ground-based observations in the mid-infrared. We have used a difference frequency laser spectrometer coupled to a hollow cathode discharge to measure the absorption spectrum of $H^{35}Cl^+$ and $H^{37}Cl^+$ in the $v = 0 - 1$ band of the $^2\Pi$ state with Dopppler limited resolution. The accuracy of the individual measurements ($\sim$ 10 MHz (3σ)) relies on a solid state wavemeter referenced to an iodine-stabilized Ar^+ laser. The new data are being fit using the CALPGM software from JPL, and the current status will be presented.

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